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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/27/99 879	08/12/99	SIDIROPOULOS	RD-036

EXAMINER	
TRAN T	
ART UNIT	PAPER NUMBER

STEPHEN R. WHITT  
1215 TOTTENHAM COURT  
RESTON, VA 20194

MM91/1001

2814  
DATE MAILED:  
10/01/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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**Office Action Summary**

Application No.

09/372,879

Applicant(s)

SIDIROPOULOS ET AL.

Examiner

THANH V TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 July 2001.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 9-20 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Lee et al. ( U.S patent # 6,097,006).

Figure 2A-3B of Applicant's Admitted Prior Art shows an integrated circuit device comprising:

- a conductive pad 210 to receive an input signal from an external signal line;
- a first doped region 220, underlying and surrounding the conductive pad 210;

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a first tap region 410 spaced apart from and surrounding a substantial portion of the first doped region, wherein the first tap region is electrically couple to a first supply voltage ( figure 3B);

an output driver transistor having a drain region 400 and source region 380, wherein the drain region is electrically coupled to the conductive pad;

Applicant's Admitted Prior Art does not show the conductive region disposing in the first doped region, the second tap region surrounding the output driver transistor, wherein the second tap region is electrically and physically couple to a second supply voltage and the source region. In figure 6, Lee et al. disclose a conductive region 550B disposing in the first doped region 500A, the second tap region 560 surrounding the output driver transistor, wherein the second tap region is electrically and physically couple to a second supply voltage( VDD) and the source region to prevent destructive electro-static pulses ( column1, lines 21-21). It would have been obvious to one having ordinary skill in the art of the time the invention was made to form a conductive region depositing in the first doped region and the second tap region being electrically and physically couple to a second supply voltage as taught by Lee et al. in the device of Applicant's Admitted Prior Art to prevent destructive electro-static pulses .

With respect to claim 5, Lee et al. show the first doped region 500A is of the first doping density ( P) of the first conductivity type (P), the conductive region is of a second doping density ( P<sup>+</sup>) of the first conductivity type wherein the first doping density is less than the second doping density.

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2. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Art and Lee et al. as applied to claim 1 above, and further in view of Okabe (previously applied).

Applicant's Admitted Prior Art and Lee et al. disclose the most aspect of the instant invention except for the first tap region being of a third doped region and the second tap region being a fourth doped region, the third doped region being of an opposite conductivity type than the first doped region and the fourth doped region being a P type doped region.

Referring to figure 5, Okabe disclose an integrated circuit device having the first tap 112a is a third doped region (P+) type which is of an opposite conductivity type than the first doped region (n type); the second tap region 103a being a fourth doped region, and the fourth doped region being a P type region to reduce the cell size of a vertical bipolar transistor (column 1, lines 11-12). It would have been obvious to one having ordinary skill in the art of the time the invention was made to form a first tap being a third doped region (P+) type which is of an opposite conductivity type than the first doped region (n type); the second tap region being a fourth doped region, and the fourth doped region being a P type region as taught by Okabe in the device of Applicant's Admitted Prior Art in view of Lee et al. to reduce the cell size of a vertical bipolar transistor.

3. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, in view of Lee et al. as applied to claim 1 above, and further in view of Corbett et al. (previously applied).

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Applicant's Admitted Prior Art in view of Lee et al. disclose most aspects of the instant invention ( paragraph 1 ) except for the conductive region consisting of polysilicon and the conductive tap region consisting of an doped layer positioned beneath the conductive region. Corbett et al. teach using polysilicon under the bond pad to increase the sensitive of detecting damage under the bond pad from the wire bond pad formation ( Column 4, lines 15-17). It would be obvious to one having ordinary skill to at the time the invention was made to make conductive region as polysilicon to increase the sensitive of detecting damage under the bond pad from the wire bond pad formation.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

### **Conclusion**

4. This is non-final rejection. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be fax to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform with the notice published in the official Gazette, 1096 OG 30( 15 November 1989). The Art Unit 2814 Fax Center number is (703) 308-7722 or -7724. The Art Unit 2824 Fax Center is to be used only for papers related to Art Unit 2814 applications.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THANH V TRAN whose telephone number is 703-

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306-0208. The examiner can normally be reached on 8:00AM-5:30PM Monday through Friday or by e-mail via Thanh.Tran1@uspto.gov.

6. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306 2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703 -308-7722 for regular communications and 703 -305-3431 for After Final communications.

7. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

8. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
<b>U.S Class/Subclass(es):</b> 257/ 693,784,760,355,334,408,203,306 438/222,223,228	09/27/01
<b>Other Documentation:</b>	
<b>Electronic Database(s):</b> East ( USPAT)	09/27/01

Thanh Tran  
September 28, 2001

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